

From the INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

BASELL POLYOLEFINE GMBH Intellectual Property F206 Carl-Bosch-Strasse 38 D-67056 Ludwigshafen ALLEMAGNE

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PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing (day/month/year)

07.10.2004

Applicant's or agent's file reference LU6037

International filing date (day/month/year)

Priority date (day/month/year)

International application No. PCT/EP 03/07567

14.07.2003

15.07.2002

IMPORTANT NOTIFICATION

Applicant

BASELL POLYOLEFINE GMBH et al

- 1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
- A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
- 3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

The applicant's attention is drawn to Article 33(5), which provides that the criteria of novelty, inventive step and industrial applicability described in Article 33(2) to (4) merely serve the purposes of international preliminary examination and that "any Contracting State may apply additional or different criteria for the purposes of deciding whether, in that State, the claimed inventions is patentable or not" (see also Article 27(5)). Such additional criteria may relate, for example, to exemptions from patentability, requirements for enabling disclosure, clarity and support for the claims.

Name and mailing address of the international preliminary examining authority:

<u>a</u>))

European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465 Authorized Officer

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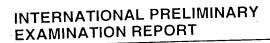
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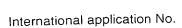


INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

pplicant's or agent's file reference U6037	FOR FURTHER ACTION Se	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)		
nternational application No.	International filing date (day/month/ye	Priority date (day/month/year) 15.07.2002		
nternational Patent Classification (IPC)	or both national classification and if C			
C08F10/00				
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A Band				
Applicant BASELL POLYOLEFINE GMBH	et al			
		by this International Preliminary Examining		
1. This international preliminary	examination report has been prepared the applicant according to Article 36.			
Authority and is transmitted to	,			
2. This REPORT consists of a to	otal of 4 sheets, including this cover st	neet.		
		to the state of claims and/or drawings which have		
	mpanied by ANNEXES, i.e. sheets of the basis for this report and/or sheets	he description, claims and/or drawings which have containing rectifications made before this Authority tions under the PCT).		
been amended and are	ection 607 of the Administrative Instruc	tions under the PCT).		
These annexes consist of a to	otal of Z. Sheets.			
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	the following itoms:			
This report contains indication	ns relating to the following items:			
🛭 Basis of the opini	on			
🛭 Basis of the opini	on	ventive step and industrial applicability		
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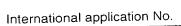
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1	Basis	of the	report

1. With regard to the **elements** of the international application (Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)):

	Desc	ription, Pages	
	1-33		as originally filed
	Clair 1-10	ns, Numbers	received on 08.07.2004 with letter of 05.07.2004
	34-3		received on 08.07.2004 with letter of 05.07.2004
2.	lang	uage in which the inte	ge, all the elements marked above were available or furnished to this Authority in the reational application was filed, unless otherwise indicated under this item.
	The	se elements were avai	able or furnished to this Authority in the following language: , which is:
		the language of a tran	slation furnished for the purposes of the international search (under Rule 23.1(b)).
		the language of public	ation of the international application (under Rule 48.3(b)).
		the language of a trar Rule 55.2 and/or 55.3	slation furnished for the purposes of international preliminary examination (under
3.	With inte	n regard to any nucleo rnational preliminary e	tide and/or amino acid sequence disclosed in the international application, the xamination was carried out on the basis of the sequence listing:
		contained in the inter	national application in written form.
		filed together with the	international application in computer readable form.
		furnished subsequen	ly to this Authority in written form.
		turnished subsequen	tly to this Authority in computer readable form.
		The statement that the	le subsequently furnished written sequence listing does not go beyond the disclosure polication as filed has been furnished.
		The statement that the listing has been furni	ne information recorded in computer readable form is identical to the written sequence shed.
4. The amendments have resulted in the cancellation of:			
		the description,	pages:
		the claims,	Nos.:
		the drawings,	sheets:

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5. 🗆	This report has been established as if (some of) the been considered to go beyond the disclosure as file	e amendments ed (Rule 70.2(5 //.
	•		t and annoyed to

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

- 6. Additional observations, if necessary:
- V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- 1. Statement

-1-10 Yes: Claims Novelty (N) Claims No: 1-10 Claims Yes: Inventive step (IS) Claims No: 1-10 Claims Yes: Industrial applicability (IA) Claims No:

2. Citations and explanations

see separate sheet





Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1: WO 9961487

Document D1, which is considered to represent the most relevant state of the art, discloses in example 3 a process for the preparation of a catalyst for olefin polymerization. An organic transition metal compound

(Dimethylsiandiyl bis (2.n-propyl-4-(4'-tert.-butyl-phenyl)indenyl)zirconium dichloride is first reacted with a five fold excess of trimethyl aluminum. The resulting mixture contains at least the following products:

- -(Dimethylsiandiylbis(2.n-propyl-4-(4'-tert.-butyl-phenyl)indenyl)zirconiumdimethyl
- -trimethyl aluminum
- -dimethyl aluminum chloride

The subject matter of claim 1 differs from the above described mixture as dimethyl aluminum chloride falls not under the definition of the organometallic compounds described in claim 1 under B (R₁₋₃ can not be Cl)

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The independent claims 8-10 refer back to claim 1 and are therefore regarded to be new as well.

The technical effect brought by the above described difference is an improvement of the polymerization activity of the supported catalyst system.

(see example 1 of the application vs. comparative example A - a 2.5-fold increase of catalyst activity).

The objective technical problem to be solved is to provide a supported catalyst system with improved activity. None of the cited prior art documents disclose the use of two different organometallic compounds as defined under B of claim 1 of the present application in order to solve this problem.

The solution to this problem proposed in claim 1 of the present application is therefore considered as involving an inventive step (Article 33(3) PCT).

Claims 8-10 refer back to claim 1 and as such also meet the requirements of the PCT inventive step.

We claim:

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- 1. A process for preparing a catalyst for olefin polymerization which is obtainable by bringing
- 5 A) at least one organic transition metal compound,
 - B) a mixture of at least two different organo metallic compounds and
 - C) at least one cation-forming compound

into contact with one another, wherein the organic transition metal compound A) is firstly brought into contact with the mixture of the organo metallic compounds B).

- 2. A process for preparing a catalyst for olefin polymerization as claimed in claim 1, wherein
 - D) at least one support

is used as further component.

- 20 3. A process for preparing a catalyst for olefin polymerization as claimed in claim 1 or 2, wherein
 - E) at least one Lewis base
- 25 is used as further component
- A process for preparing a catalyst for olefin polymerization as claimed in any of claims 1 to 3, wherein the cation-forming compound is a strong uncharged Lewis acid, an ionic compound having a Lewis-acid cation, an ionic compound containing a Brönsted acid as cation or a compound of the aluminoxane type.
 - 5. A process for preparing a catalyst for olefin polymerization as claimed in any of claims 1 to 4, wherein the cation-forming compound is obtained during the preparation of the catalyst by reaction of a compound having at least one functional group containing active hydrogen with an organometallic compound.
 - 6. A process for preparing a catalyst for olefin polymerization as claimed in claim 5, wherein the compound having at least one functional group containing active hydrogen is a hydroxyl-containing compound.

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- 7. A process for preparing a catalyst for olefin polymerization as claimed in claim 6, wherein the hydroxyl groups are bound to an element of main group 13, 14 or 15 of the Periodic Table.
- 5 8. The use of a catalyst prepared as claimed in any of claims 1 to 7 for the polymerization of olefins.
 - 9. A catalyst obtainable by a process as claimed in any of claims 1 to 7.
- 10 10. A process for the polymerization of olefins using a catalyst as claimed in claim 9.

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REPLACED BY

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